

ACCIDENT INFORMATION - BRIEF

Update for October 29, 2004

SUBJECT: Pinnacle Airlines Accident in Jefferson City, Missouri on October 14, 2004

I. BACKGROUND

A Bombardier 50 passenger Regional Jet, CL-600-2b19 (CRJ –200), s/n 7396, crashed in a residential area of Jefferson City Missouri at 22:30 (CST), Oct 14, 2004. The aircraft was operated by Memphis based Pinnacle Airlines/ Northwest Airlinck. Fatalities: 2 fatalities on board (pilot and co-pilot), no passengers were on board.

II. INFORMATION FROM FLIGHT DATA RECORDER (FDR)

A. Climb to 41,000 ft: The final climb to cruise altitude was achieved with the autopilot engaged on a preselected altitude of 41,000 ft using vertical speed mode. At 37,000 feet the vertical climb speed was set to 400 FPM rate of climb. A slow deceleration began at approx 38,000, from a climb speed of 200 KCAS. The aircraft decelerated at an average rate 0.1 kt/sec until level off at 41,000, ft which occurred with an airspeed of 165 KIAS, still decelerating.

B. Events at 41,000 ft

(1) Aircraft: At 41,000 ft and approximately 150 kts the shaker activated and the autopilot disconnected. After the first shaker activation, the control column position moved slightly forward reducing the pitch attitude by 4 degrees. After a few seconds the control column was repositioned aft (approximately the same position as the initial shaker activation). Subsequently, four pusher activations occurred, each time preceded by shaker followed by a pitch attitude reset to level flight attitude. When the pitch attitude was reset from the third pusher, the attitude reached approximately 30 degrees nose up and this resulted in a fourth push occurring at 20 degrees AOA, registering a max of 27 degrees for approx 5 secs. During this time the aircraft experienced an apparent uncommanded rolloff to 85 degrees left bank. During these oscillations there were heading variations of ± 15 deg which is typical of a dutch roll. After the last large amplitude excursion the oscillations and AOA decreased.

(2) Engines: Both engines' operations were stable and matched throughout this period until the second pusher activation at approximately 11° AOA. During the second pusher activation, the engine speeds started to roll back slightly and then recovered. With the third pusher activation, the engine speeds rolled back for the second time. The engines were again recovering when the fourth pusher activation occurred. At this point both engines stopped recovering, resumed rolling back eventually reaching zero N2. During this time engine 2 turbine temperature reached approximately 1200°C, exceeding the redline limit by

approximately 300°C . Engine 1 reached a maximum temperature that was approximately 100°C less than redline.

III. CERTIFICATION SUMMARY

A. Procedures: FAA Certification of the CL-600-2B19 was performed in accordance with the US-Canada bilateral procedures. The FAA was responsible for foreign validation to include familiarization flight testing (which is a small subset of the Transport Canada flight test program) and review of other aspects of the certification program as deemed appropriate or recommended by Transport Canada.

B. Scope and Results of Foreign Validation Familiarization Flight Testing

FAA validation testing was performed in August and October of 1992. It consisted of 8 flights comprising approximately 12 flight hours.

The maximum altitude achieved for various testing is as follows: handling stalls 35,000 feet, stability and control (dutch roll) 39,000 feet, engine inlet distortion 37,000 ft, and constant mach windup turns 39,000 ft.

October flights were added as a result of an FAA finding of inadequate compliance to FAR 25.939(a), turbine engine operating characteristics.

Transport Canada (TC) and the FAA differed in their assessment of where deterrent buffet levels occurred from wind up turn test maneuvers at high mach, high altitude. The NYACO's definition of deterrent buffet was deeper in AOA than TC. FAA and TC agreed to have a third pilot evaluate the deterrent buffet boundary. A SACO Test Pilot repeated the test point and made the same finding as the NYACO Test Pilot which was that engine rollbacks occurred before the FAA definition of deterrent buffet. Furthermore, the SACO test point resulted in flameout of both engines which had to be manually shut down and subsequently restarted. The stall protection system was then modified to further reduce the pusher firing as a function of Mach. A second flight was flown by the SACO Test Pilot with the modifications in place and found the aircraft and engine characteristics acceptable.

III. STATUS

NYACO Test Pilot Rod Huete has been assigned to the performance group of the NTSB accident investigation team. The initial meeting for the performance group is Thursday, November 4, 2004.